

REMARKS

Claims 1-69 are pending in this application. In the Office Action, claims 2-5, 12, 14, 15, 20-37, 41, 42, 50 and 52-69 are withdrawn from consideration as being directed to a non-elected invention; claims 1, 6-11, 13, 16-19, 38-40, 43-49 and 51 are rejected under art; and claims 20 and 38 are allowed.

As a preliminary matter, it is note that the Examiner had acknowledged Applicants' claim for foreign priority under 35 U.S.C. § 119 as indicated in paragraph 2 of page 3 in the Office Action. However, it is noted that all of the boxes in the Office Action Summary (PTOL-326) have not been checked to denote that the certified copies of the priority documents have been received in the U.S. Patent and Trademark Office. Accordingly, it is respectfully requested that the Examiner identify all of the certified copies of the priority documents have been received by checking all the appropriate boxes in the PTOL-326 in the next communication.

Election/Restriction

Applicants acknowledge that claims 2-5, 12, 14, 15, 20-37, 41, 42, 50 and 52-69 have been withdrawn from consideration as being directed to a non-elected invention.

However, the Examiner asserts on page 2, third paragraph in the Office Action that "while reason "4" *suggests* that claims withdrawn by applicant's election are not patentable distinct, the examiner refrains from considering this an admission of obvious variants among the "species". Applicants traverse this assertion.

In particular, Applicants are not suggesting that claims directed to the non-elected species are not patentably distinct. Applicants merely made an election in order to comply

with the Examiner's election of species requirement. In fact, if an election of species is made, the species must be patentably distinct from each other (see MPEP 806.04(h) and 808.01(a)). Accordingly, as the Examiner required an election of species among the claims, it is submitted that the non-elected claims must be patentably distinct, and considered not obvious over the non-elected species. If, however, the Examiner construes the non-elected claims to be not patentably distinct, the Examiner should withdraw the election of species requirement and respectfully examine all the claims.

Further, the Examiner states on page 2, fourth paragraph in the Office Action that "with regard to reason "1"...be mutually exclusive. However, this argument is not applicable because the previous examiner restricted based on disclosed embodiments, and did not "restrict claims to species". However, clarification is respectfully requested.

Applicants contend that "claims are never species". Claims may be restricted to a single embodiment or a claims may include two or more of the disclosed embodiments within the breath and scope of the definition (see MPEP 806.04(e)). In other words, species are always directed to the specifically different embodiments. Thus, it is respectfully submitted that the Examiner has made an inaccurate assertion and respectfully request clarification.

Further, the Examiner admits, in the same paragraph, that claims 1 and 43 are generic claims, yet asserts that there are no generic claims in the application. Thus, Applicants submit that, at least, claims 1 and 43 are generic. If, on the other hand, Applicants assertion is incorrect, it is respectfully requested for the Examiner to clarify his position.

Allowable Subject Matter

Applicants initially appreciate the indication that claims 20 and 38 are allowed. However, clarification is respectfully requested. Specifically, the Examiner withdrew claim 20 as being directed to non-elected invention in the Restriction Requirement, yet the Examiner indicated that claim 20 is allowed. Applicants have assumed that claim 20 is allowed because the Examiner explicitly provides a reason for allowance (e.g., “dual spacers on sidewalls of gate patterns”). Further, as claims 20 and 38 are allowed, dependent claims 21-30, 32, 35-37, 41 and 42 are also allowable by virtue of their dependency to independent claim 20. Further, as independent claim 20 is allowed, independent claim 58 is allowable as claim 58 also recites the feature of “dual spacers”. Dependent claims 59-69 are allowable by virtue of their dependency to claim 58. Thus, it is respectfully submitted that claims 20-38, 41, 42 and 58-69 are allowable in view of the forgoing remarks.

Objection to the Specification

The Office Action objected to the specification. In particular, the Examiner objected to paragraph [0001] as being redundant with field [30] of an issued patent and incorporating essential subject matter based on a priority document (e.g., provide a complete and accurate translation of the priority document). Applicants traverse the objection.

It is respectfully submitted that paragraph [0001] would not be redundant with respect to field [30] as statements pertaining to priority data may be included in the specification. See for example issued patents USP 6,859,405, USP 6,856,563 and USP 6,853,317. Further, specification including statements regarding foreign priority application may be incorporated by reference. MPEP 201.13G states that “Applicants may incorporate by reference the

foreign priority application by including a statement in the U.S. application—as–filed that such specifically enumerated foreign priority application is ‘hereby incorporated by reference.’”

Thus, reconsideration and withdrawal of the objection are respectfully requested.

Claim Rejection – 35 U.S.C. § 112

Claims 43-49 and 51 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. In particular, the Examiner asserts that “maintaining a nitrogen atmosphere in a reaction chamber and forming a silicon oxide layer, necessarily forms a silicon oxynitride, and not a silicon oxide”. However, Applicants respectfully traverse this objection.

In particular, the feature of “maintaining a nitrogen atmosphere and supplying silicon gas and oxygen gas” does not necessarily form a silicon oxynitride as Applicants’ invention discloses that silicon oxide layer may be formed. As an example, non-limiting embodiment, paragraphs [0037] and [0038] illustrate that nitrogen atmosphere may be created and maintained in a reaction chamber (step S30), whereby in order to maintain nitrogen atmosphere in the chamber, a nitrogen source gas may be supplied at a constant flow rate, for a period of time. Then in (step S40), a silicon source gas and/or an oxygen source gas may be supplied to the reaction chamber in the nitrogen atmosphere to form a silicon oxide layer 22 on the gate line patterns (see FIG. 4). Thus, Applicants’ invention demonstrates that a silicon oxide layer may be produced while maintained in a nitrogen atmosphere.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Claim Rejection – 35 U.S.C. § 102

Claims 1, 6, 7, 9, 10, 17, 39 and 40 are rejected under 35 U.S.C. § 102(b) as being anticipated by Lin, U.S. Patent 6,218,314. The rejection is respectfully traversed.

As a preliminary matter, Applicants note that claims 43-49 and 51, which were indicated by the Examiner as directed to an elected invention and considered by the Examiner have not been rejected under art. Accordingly, Applicants have assumed that these claims contain allowable subject matter.

Lin fails to disclose or suggest supplying a nitrogen source gas to a reaction chamber to create a nitrogen atmosphere in the reaction chamber, as recited in claim 1, and similarly recited in claim 43.

As shown in an example, non-limiting embodiment of the present invention, Fig. 2 illustrates a process of maintaining a nitrogen atmosphere inside a reaction chamber (S30) and then forming a silicon oxide layer on gate patterns by supplying silicon source gas and oxygen source gas (S40).

Lin merely discloses in the first step of fabricating the passivation layer that only silicon gas and oxygen gas is performed to form a silicon oxide layer 22 (col. 2, lines 28-30). Then in the second step, oxygen gas source and nitrogen gas source are gradually increased during the second step to form a oxide/oxy-nitride transition layer 24 (col. 2, lines 36-39). Thus, Lin is completely silent with regard to supplying a nitrogen gas source to a reaction chamber. In fact, Lin discloses that initially it is preferable that nitrogen gas source flow is zero, during the step the ratio of nitrogen source gas to oxygen source gas is increased (col. 2, lines 39-43 and Fig. 3). In other words, Lin may disclose supplying nitrogen gas to the passivation layer, however, the supply of nitrogen is performed with the supply of silicon and

oxygen gases, rather than supplying the nitrogen gas to create a nitrogen atmosphere in the reaction chamber.

Accordingly, Lin fails to disclose or suggest supplying a nitrogen source gas to a reaction chamber to create a nitrogen atmosphere in the reaction chamber, as recited in claim 1, and similarly recited in claim 43.

Because Lin fails to disclose each and every feature of the claimed invention, it cannot provide a basis for a rejection under 35 U.S.C. §102. Further, Lin cannot be found to be obvious. Reconsideration and withdrawal of the rejection are respectfully requested.

Claim Rejection – 35 U.S.C. § 103

Claims 8, 11, 13, 16, 18 and 19 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Lin and further in view of Official Notice. The rejection is respectfully traversed.

In the Office Action, the Examiner states that the adjustment of numerical ranges and changing the order of process steps are not patentable unless unexpected results are achieved. However, it is respectfully submitted that the Examiner has failed to meet the *prima facie* case of obviousness because unexpected results would occur if adjustment of numerical values and changing the order of the process operation are achieved. As illustrated in an example embodiment, as described in paragraph [0039], when silicon source gas and the oxygen source gas are supplied after the supply of the nitrogen source gas, metal oxides may be removed from the surface of the metal layer which: 1) increase the process margin, 2) reduce the generation of silicon coating in the reaction chamber, and 3) reduce the generation of particles in the reaction chamber. Thus, changing the order of the process steps may

produce unexpected results. Accordingly, one of ordinary skill in the art would not have been motivated to modify the teaching of Lin with any expectation of success in the manner asserted by the Examiner

For at least these reasons, Applicants respectfully submit that Lin fails to disclose or render obvious the features recited in independent claim 1. Claims 6-11, 13, 16-19, 39 and 40, which depend from independent claim 1 are likewise distinguished over the applied art for at least the reasons discussed as well as for the additional features they recite. Reconsideration and withdrawal of the rejection are respectfully requested.

CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 1-69 in connection with the present application is earnestly solicited.

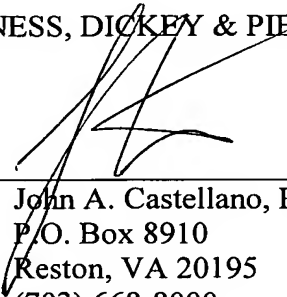
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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